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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,339	02/12/2002	Charles E. Taylor	SHPR-01041US0 SRM	5846

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EXAMINER	
TRAN, THAO T	

ART UNIT	PAPER NUMBER
1711	

DATE MAILED: 05/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/074,339	TAYLOR ET AL.	
	Examiner	Art Unit	
	Thao T. Tran	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-9,11-15,17-34 and 36-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-9,11-15,17-34 and 36-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/8/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This is in response to the Amendments filed on February 8, 2004. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

2. Claims 1-2, 4-9, 11-15, 17-34, 36-41 are currently pending in this applications. Claims 3, 10, 16, 35, and 36 (second occurrence) have been canceled. Claims 40-41 have been newly added.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C.,103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-2, 4-9, 11-15, 17-34, 36-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US Pat. 4,789,801) or Sakakibara et al. (US Pat. 4,643,745).

Lee teaches an ion generator and an air conditioner (loud speaker), comprising a first array of electrodes; a second array of electrodes downstream from the first array; and a voltage generator coupled to the electrodes to create an airflow from the first to the second electrodes; the first electrodes being ion emitters and wire-shaped, whereas the second electrodes ion collectors (see Figs. 2-3; col. 5, ln. 37-65; col. 6, ln. 26-42).

The first electrodes in Lee's invention are not slack, curved, or coiled. And Lee does not specifically teach the first electrodes having a length that is at least 15% longer than the distance

that a slack, curved, or coiled electrode would span. However, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, that specific configurations of the electrodes would have been an obvious matter of design choice. And with respect to the specific size of the electrodes, it has been within the skill in the art that specific sizes are relative dimensions that would have been merely determined by routine experimentation in order to bring forth maximal benefits attendant therewith. Since the first electrodes in Lee's invention are also emitter electrodes, they would work equally well whether they are straight, curved, coiled, or slack. This is because the electrodes emit ions from their surface. Furthermore, Lee also teaches that the dimensions of the electrodes would have been adapted to the characteristics of a particular exciting circuit and to the practical considerations of a particular application (see col. 4, ln. 44-47); thus embracing the sizes or dimensions as the presently claimed invention.

Thus, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Lee's electrode such that it would have been slack, curved, or coiled; and would have had a length that is at least 15% longer than the distance it spans, for the purpose of increasing ion emission and being suitable for a particular application.

In regards to claims 23, 25-28, and 37-39, it has been settled within the skill in the art that the manner of operation, intended use, or how the product is made, would have insignificant patentable weight when an apparatus claim is being considered. See MPEP 2114.

5. Claims 1-2, 4-9, 11-15, 17-34, 36-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakakibara et al. (US Pat. 4,643,745).

Sakakibara teaches an ion generator, comprising a first array of electrodes; a second array of electrodes downstream of the first array; a voltage generator coupled to the electrodes to

create an airflow from the first to the second electrodes; the first electrodes being ion emitters and wire-shaped, whereas the second electrodes ion collectors (see Figs. 1-4, 10; col. 2, ln. 57-67; col. 3, ln. 46-67).

Sakakibara's first electrodes are not slack, curved, or coiled. And Sakakibara does not specifically teach the first electrodes having a length that is at least 15% longer than the distance that a slack, curved, or coiled electrode would span. However, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, that specific configurations of the electrodes would have been an obvious matter of design choice. And with respect to the specific size of the electrodes, it has been within the skill in the art that specific sizes are relative dimensions that would have been merely determined by routine experimentation in order to bring forth maximal benefits attendant therewith. Since the first electrodes in Sakakibara's invention are also emitter electrodes, they would work equally well whether they are straight, curved, coiled, or slack. This is because the electrodes emit ions from their surface. Furthermore, Sakakibara also teaches that the ionic wind (or amount of ions emitted) would also be affected by the voltage applied to the first electrodes, the shape of the electrodes (see Fig. 1A), and the disposition of the electrodes with respect to each other (see Figs. 4-5; col. 4, ln. 62-65; col. 5, ln. 44-47, 58-63).

Thus, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Sakakibara's electrode such that it would have been slack, curved, or coiled; and would have had a length that is at least 15% longer than the distance it spans, for the purpose of increasing ion emission and being suitable for a particular application.

In regards to claims 23, 25-28, and 37-39, it has been settled within the skill in the art that the manner of operation, intended use, or how the product is made, would have insignificant patentable weight when an apparatus claim is being considered. See MPEP 2114.

Response to Arguments

6. Applicant's arguments filed February 8, 2004 have been fully considered but they are not persuasive.

Throughout the Remarks, Applicants contend that since the electrodes of the presently claimed invention are longer than the distance that the slack, curved, or coiled electrodes span, Applicants' electrodes would emit more ions. However, it has been within the skill in the art that the amount of ions emitted by an electrode is dependent upon different parameters, such as the voltage applied to the electrode and the disposition of the electrode with respect to other electrodes, shape and length of the electrode. As illustrated by Sakakibara, Fig. 5, a thinner and longer electrode would enhance ion emission (see col. 5, ln. 44-47), and an increase in the voltage applied to the electrode would also enhance ion emission (see col. 4, ln. 62-64). Furthermore, as pointed out in paragraph 4 above, Lee teaches the sizes or dimensions of the electrodes could be adapted to the characteristics of a particular exciting circuit and to the practical considerations of a particular application. As further illustrated by Lee, the thinner the electrode (higher electrode scale ratio) the more the ion emission (see col. 4, ln. 44-52).

Thus, both Lee and Sakakibara would have been obvious over the presently claimed invention.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao T. Tran whose telephone number is 571-272-1080. The examiner can normally be reached on Monday-Friday, from 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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May 3, 2004

James J. Seidleck
Supervisory Patent Examiner
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